Market Potential Analysis of ERP-based IT Services in Manufacturing/Engineering Industry

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Abstract

The purpose of the paper is to understand the ERP systems used by small and medium scale industries. This research will also showcase the trend of ERP softwares used by manufacturing firms along with future recommendations. This research will be used by Aditya Birla Minacs to understand the shifting of ERP paradigm in manufacturing SMEs. This study aims at giving Aditya Birla Minacs a better understanding of ERP practices in manufacturing industry.

Aditya Birla Minacs IT Services has three verticals business lines-Manufacturing, Private and BFSI. Manufacturing being the primary vertical business the focus of this project is to do the research on manufacturing industry's needs towards the IT Services and Products. Target industries – Automobiles related industries mainly.

Keywords: ERP paradigm, IT services, Market Potential, Company Potential Analysis, Market penetration

Introduction

The topic was chosen to understand that how the ERP systems are used by small and medium scale industry. This study will help to understand the ERP System trends used in manufacturing / engineering industries in and around Bangalore.

This study tells the inclination pattern of the market towards the ERP system in accordance to its type, price, customization, standardisation and the choice of service providers. This also tells the requirement of ERP systems in industry so that the companies can provide the best in the requirements.

Significance of the Study

Focus and Differentiation are two major competitive edge on which Aditya Birla Minacs needs to strive and conquer this segment of the Market.

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This research could be further used for:

1. Any sort of assistance for the research on the similar topic.
2. Well might help company to understand market trend better, will help them serve better if nothing else.
3. It can be used as a guide for the IT companies (ERP Service Provider) who wants to launch their project in the mention areas of the research.

Literature Review

Upadhyay, Parijat and Dan, Pranab K., (2009) has found that the SMEs have a particular area of interest and projected factors to analyze the long term sustainability of their business in the long run. Using ERP systems to get a solution of their given problem has been a major concern. Over the past year, the global economic crisis has put the spotlight on many business organizations of any size.

Grenci, Richard T. and Hull, Bradley Z, (2004) has found that a basis for using the systems development life cycle (SDLC) as a framework for evaluating ERP implementation success and failure. In turn, the successes and failures provide a rich and interesting venue for introducing students to the relevance and implications of ERP applications as well as the SDLC. Furthermore, the component can be used in a variety of information systems and management classes, including introduction to IS, introduction to ERP, systems analysis and design, project management, and even an MBA-level IS class.

Bozarth, Cecil1, (2006) has found that all three companies did an adequate job linking the ERP decision to higher-level IS and supply chain strategies, although mid-level managers dominated the strategic debate. However, two of the companies fell far short in the specification and selection processes, particularly with regard to achieving broad participation and managing stakeholder commitment. As such, these two companies missed an opportunity to think independently about their long-term information requirements and capabilities, proactively manage the debate with the vendors, and obtain early buy-in from key users.

Haug, Anders Pedersen, Anne Arlbjorn, Jan Stentoft, (2010) has found that there are significant impacts of choosing one of the four ERP system setups across parent-subsidiary supply chains, e.g. quality of communication, degree of local management, synergy effects, etc.

Koh, S. C. Lenny, Simpson, Mike and Lin, Y, (2006) has found that out of total 30 companies responded to the questionnaire, 56 per cent of which thought their systems worked well and 80 per cent reported that material shortages were responsible for tardy delivery performance. Tardy delivery was directly or indirectly caused by poor supplier delivery performance in the opinion of 92 per cent of respondents. Seven companies had developed an uncertainty-diagnosing model. Not all companies needed to adopt the model.

Pan, Kuifan Nunes, Peng, Miguel Baptista and Chao, Guo, (2010) has identified 37 risk events, of which seven were identified as the most critical for ERP exploitation in the case company. The findings show that organisational and human-related risks are the crucial factors for potential ERP failure and not the usually suspect technical risks.

Dardan, Shana L., Kumar, Ram L. and Stylianou, Antonis C, (2007) has developed a diffusion model of customer-related IT (CRIT) based on stock market announcements of investments in those technologies. Customer-related IT investments are defined in this work as information technology investments made with the intention of improving or enhancing the customer experience. They also found that both the size and industry of the company affect the path of CRIT diffusion and also found that how data collection techniques typically used for financial event studies can be used to study information technology diffusion.

Koh, S. C. Lenny and Simpson, Mike, (2005) has found that ERP could improve responsiveness and agility to change, but not to uncertainty. SMEs could create a competitive advantage by being more responsive to change in the ERP system before generating purchase and work order. ERP systems could not deal with uncertainty due to its stochastic and unpredictable nature. SMEs use a range of buffering or dampening techniques under uncertainty to be competitive in delivery.

Perera, H. S. C. and Costa, W. K. R, (2008) has found that in Enterprise Resource Planning (ERP) there are seven major criteria which are identified and under each criterion several sub-criteria are identified. Selection of the best suited ERP system leads to a multi-criteria decision making problem as ERP systems should be evaluated based upon many criteria. Using the identified main and sub criteria, an Analytic Hierarchy Process (AHP) model is developed for ranking the ERP software.

Objectives of the Study

The objective of this study is to understand the ERP systems used by small and medium scale industries. This report will also showcase the trend of ERP software used by manufacturing firms along with future recommendations. This report will be used by Aditya Birla Minacs to understand the shifting of ERP paradigm in manufacturing SMEs. This study aims at giving Aditya Birla Minacs a better understanding of ERP practices in manufacturing industry.

Research Methodology

The frame work of the project included two major activities:

1. Primary Market Research based on field visits.
2. Questionnaire based data collection and analysis.

Research Design

Exploratory research design is followed as this type of research conducted for a problem that has not been clearly defined. Exploratory research helps determine the best research design, data collection method and selection of subjects. It should draw definitive conclusions only with extreme caution. Exploratory research often concludes that a perceived problem does not actually exist.

Sample Size: The 30 responses were analyzed. The responses have been taken from the Company's manufacturing/ engineering units in and around Bangalore and Karnataka region.

Sample Area: Bangalore Region, Peeneya Industrial Area and Hosur (SIPCOT) Industrial Area.

Data Collection

Keeping in mind the nature of requirements of the study to gather all the applicable information regarding the topic of market potential analysis of IT services in manufacturing / engineering industry, the data which was collected was primary. Primary data is important and much more useful as it is undisguised information about the results of an experiment or observation. It's like no one has spun it by adding their own opinion or bias, so they can form the basis of objective conclusion.

Instruments Used

Questionnaire is used as instruments.

It is used mainly focusing the objective of the study i.e. to do analysis of market trend of ERPs in manufacturing / engineering industries.

Parameters of the questionnaire are
- Focusing on present ERPs used in SMEs.
- Present service providers of the SMEs.
- Requirement of the ERPs (Types) in the SMEs.
- Procurement process of the SMEs.

Limitations
- More time was required for a descriptive study.
- More sample data is required.
- Companies in the far-off Bangalore regions could have also been included.
- Secondary research could have been also emphasized to be done parallel with primary research but due to limited time and huge database it could not happen.

Analysis and Interpretation

How many companies know Aditya Birla Minacs?

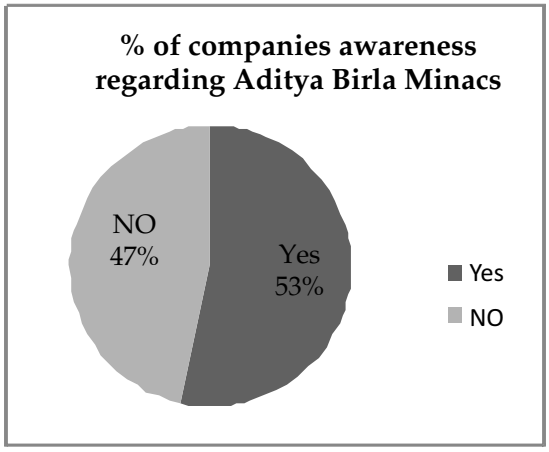

Figure 1: Awareness regarding Aditya Birla Minacs

Interpretation: - In survey 47% of the companies said that they were unaware of Aditya Birla Minacs even if they know about Aditya Birla Group and rest 53% of the companies said that they are aware of Aditya Birla Minacs.

What are the major ERP Applications used by companies?

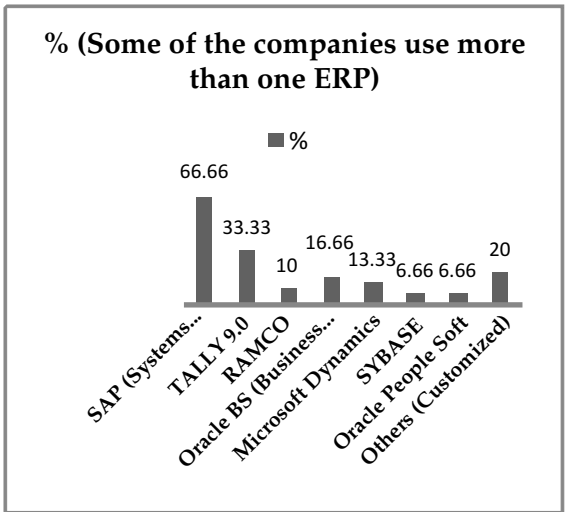

Figure 2: (NOTE: Some of the companies are using more than one ERP)

Interpretation: In different ERPs present in the market SAP is used by 66.66% of the companies, Tally 9.0 is used by 33.33% of the companies, RAMCO is used by 10% of the companies, Oracle BS is used by 16.66%, Microsoft Dynamics is used by 13.33% of the companies, SYBASE and Oracle People Soft both are used by 6.66% of the companies and almost 20% of the companies are using customized ERPs for their different modules. Some of the companies also like to use more than one or two ERP software.

What are the verticals in which ERP is being used?

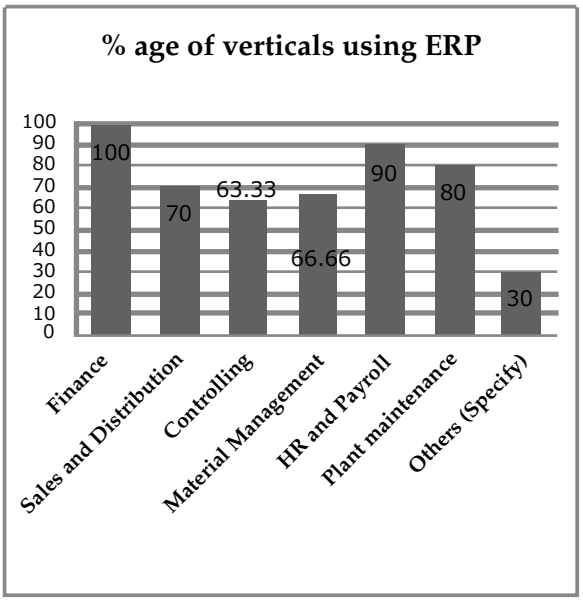

Figure 3: (NOTE: Some of the companies are using diff. ERPs for diff. verticals)

Interpretation: In every ERP there are different modules present in the market. In the Survey 100% of the companies are using Finance module of their ERP, For Sales and Distribution module 70% of the companies are using their ERP, 63.33% of the companies are using Controlling module of their ERP, For Material Management module 66.66% of the companies are using their ERP, 90% of the companies are using HR and Payroll module of their ERP, For Plant Maintenance 80% of the companies are using their ERP and 30% of the companies also use other modules of ERP like designing, security etc.

Who are the Major Service Providers?

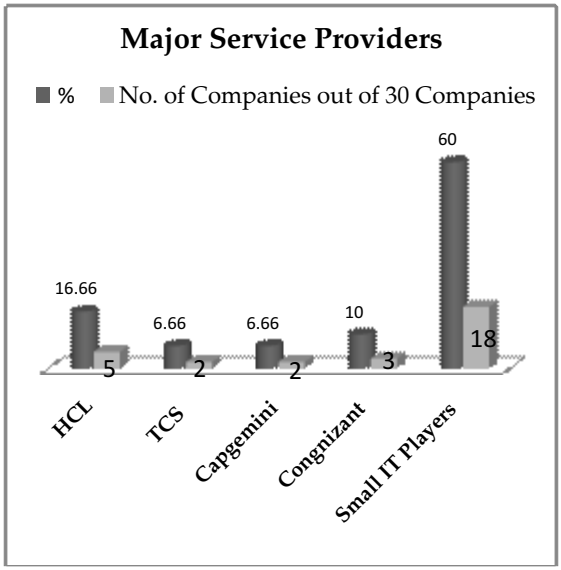

Figure 4: Major Service Providers

Interpretation: In the competitive world of IT Services Provider 60% of the companies relies on small IT players or local vendors. In rest of the companies HCL leads with 16.66% over other big companies like Cognizant, TCS, Capgemini etc.

How many customized or standard IT systems (ERPs) are used by company?

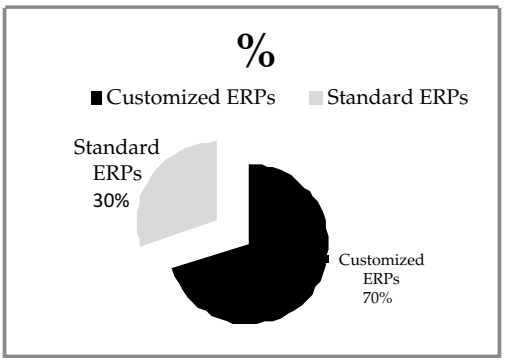

Figure 5: Systems used by companies

Interpretation: In survey 70% of the companies are using customized ERPs in there IT systems and rest 30% of the companies are using standard ERPs in there IT system.

Is company using Non – ERP Applications?

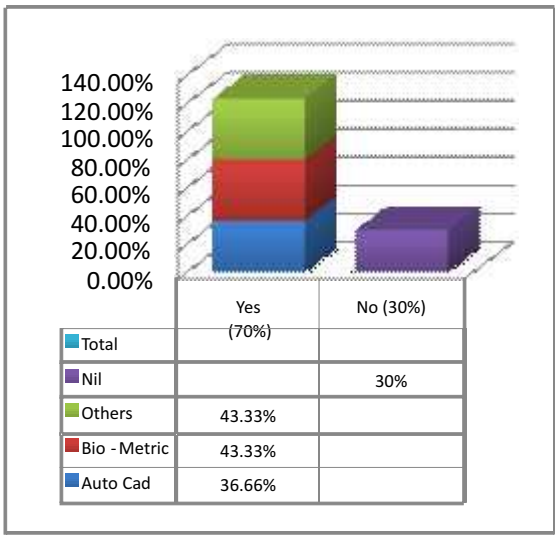

Figure 6: Companies using Non–ERP Applications

Interpretation: 70% of companies are also using Non-ERP applications and in this 70% almost 36.66% of the companies uses Auto Cad, 43.33% of the companies are using Bio-Metric applications and also 43.33% of the companies are using other small Non-ERP applications such as CATIA, SCADA etc.

Is there any Integration of Core Applications with other systems?

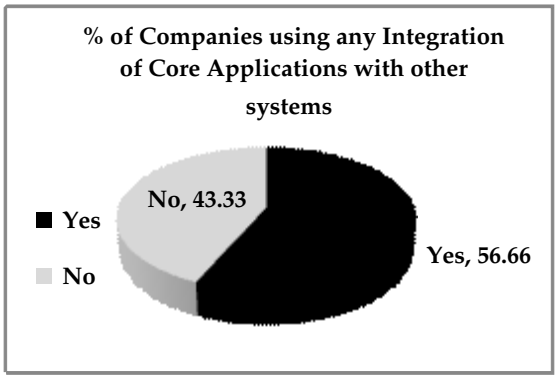

Figure 7: Integration of core applications with other systems

Interpretation: In survey 56.66% of the companies are using any integration of core applications with others systems and rest 43.33% of the companies are not using any integration of core applications with others systems.

What kind of ERP they want?

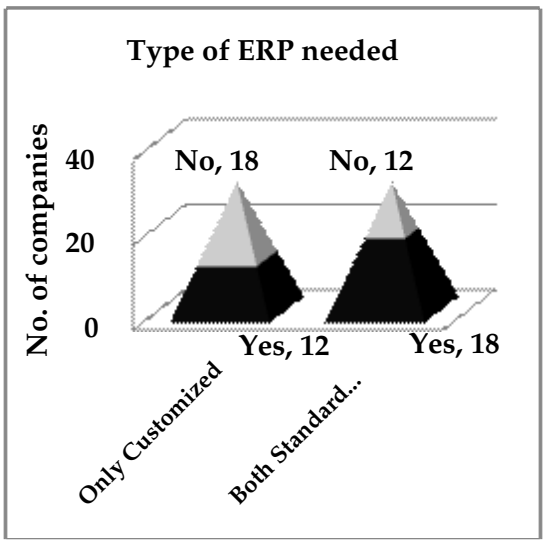

Figure 8: Types of ERP needed

Interpretation: In survey of 30 companies as sample only 12 of them showed a desire of only customized type of ERP as there requirement rest 18 companies wants the combination of both standard and customized type of ERP as requirement none of the companies want only standard ERP tools.

Findings

- There are many companies who were unaware about Aditya Birla Minacs as a company.
- Most of the companies use SAP and Tally 9.0 on a large scale and not Microsoft or Oracle.
- Finance, HR and Payroll and Plant Maintenance are the verticals wherein ERP is most required.
- SMEs outsource their IT systems to small players due to more focus on each customer and comparatively low price.
- SMEs use their IT systems in customized form according to their system requirements and very few percentages of them use standard IT system.
- Companies also use Non-ERP IT systems especially in designing, monitoring, web services etc. Application such AUTOCAD, Bio-Metric, CATIA, SCADA etc. are used majorly.
- Companies use their core applications with other systems as it is more convenient and economical in implementation as well as further usage. This also helps in maintaining performance. Integration of old ERPs with new ERPs is most common application.
- SMEs use their IT systems in customized form according to their system requirements and very few percentages of them use standard IT system so there future requirement of ERPs are both customized as well as standard types so that they can use according to their needs.

Conclusion

This research was done in a very limited time period. Number of companies taken as a sample was 30. The entire research's conclusion and recommendations are based on the findings from these 30 sample data. From the entire analysis we can conclude that Most of the SMEs outsource their IT systems and do not prefer large players in the market. Hence Focus and Differentiation are two major competitive edge on which Aditya Birla Minacs needs to strive and conquer this segment of the Market.

Recommendations

- It is required to spread more information about the significant presence of the company Aditya Birla Minacs.
- More emphasis needs to be given on strengthening SAP and Tally 9.0. Also company can make COE (Centre of excellence) in other ERP practices.
- Company needs to improve and give emphasis on its resource skills on Finance, HR and Payroll and Plant Maintenance verticals.
- Aditya Birla Minacs has very good prospect in customized IT services segment as it has the option of providing the customized IT solutions.
- Company has very good prospect in customized IT services as it has the option of providing the IT Solutions with customization with these Non-ERP applications.
- Aditya Birla Minacs as a company has very good prospect in integration of ERPs with the IT solutions with customized and integrated system with core applications.
- Company has very good prospect in this segment as it has the option of providing the customized as well as standard IT solutions as required.

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